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STRESS IN THE CUPAN (UTO-AZTECAN) LANGUAGES

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0. Introduction

1. Stress placement in Cupeño
2. The historical development of stress placement in the Cupan languages
3. Cognate sets

0. The Cupan languages, Cahuilla, Cupeño, and Luiseño, have been identified by Bright and Hill¹ as constituting a distinct genetic group within Uto-Aztec in Southern California. Some preliminary reconstructions for Proto-Cupan were formulated, but a number of important problems remain. A crucial question in Cupan is the precise determination of stress placement, not only in underlying morphophonemic forms reconstructed within each language, but also in the proto-forms. In these languages the placement of stress is apparently determined very early in the ordered set of phonological rules. Hence, the remaining phonological rules, which yield such important points for comparison as precise vowel quality and quantity, vowel deletion, consonantal assimilation and dissimilation, and so forth, are dependent upon the early rules for stress placement.

In a recent paper, Seiler² presents a proposed history of some stress changes in the Cupan languages, particularly as these relate to the development of the structure of the verb. He calls into question the contention of Bright and Hill that the stress pat-

terns in Cupeño and Luiseño represent the situation in Proto-Cupan, with Cahuilla being the innovating branch. He suggests that with regard to stress, Cahuilla is instead the most conservative of the three languages, and he presents evidence to show how changes from the situation found in Cahuilla may be explained for Cupeño and Luiseño.

In this paper we present new evidence on this question, particularly from Cupeño. By using the Cupeño evidence, supplemented by evidence from Cahuilla and Luiseño and from Serrano,³ another Uto-Aztec language spoken in Southern California but outside the Cupan group, we hope to demonstrate that Cupeño and Luiseño, as Bright and Hill contend, do in fact retain the conservative stress pattern and that Cahuilla is the innovating language. There are some apparently aberrant patterns in the Wánikik dialect of Cahuilla, which Seiler suggests, on the basis of internal reconstruction in Cahuilla, represent innovations in that language. We hope to show that some of these may equally well be seen as retentions from the conservative situation found in Cupeño and Luiseño.

1.0. There are three ways in which the replacement of stress is determined in Cupeño words:

¹ William Bright and Jane H. Hill, The linguistic history of the Cupeño, in *Studies in Southwestern Ethnolinguistics*, ed. by Dell Hymes, pp. 351-371 (1967); hereafter referred to as Bright and Hill.

² Hansjakob Seiler, Structure and reconstruction in some Uto-Aztec languages, *IJAL* 33.135-147 (1967).

³ Field work on Cahuilla was done in connection with a field methods course at the University of California, Los Angeles. Jane Hill's field work on Cupeño was supported by the Survey of California Indian Languages, Department of Linguistics, University of California, Berkeley, and University of California, Los Angeles. Kenneth Hill's field work on Serrano was supported by the American Council of Learned Societies.

1.0a. A root may have inherent stress. Stress in such roots is invariant, except as discussed in **1.2**.

1.0b. Stress may be determined by its presence in certain affixes, if the root to which they are affixed have no inherent stress.

1.0c. If neither the root nor the affixes in a word have inherent stress, stress is placed on the first vowel of the word.

1.1. In phonological terms, there are two types of roots in Cupeño. A root of the first type contains some stressed vowel, indicated with the acute accent. A root of the second type contains only unstressed vowels, indicated by the absence of any accent (**1.3**).⁴

Examples of words containing 'stressed' roots are: háxə-lə [haxəl] *sand*, kə-xá-lə [kəxál] *quail*, wə-xítVʔi-tə [wəxítʔit] *piñon pine*, máhasi-və-tə [máasivət] *grass sp.*, čə-qúlʷə [čəqúlʷə] *to joke, tease*. When such roots are inflected to form words, the stress remains in its original position in the root, and its position influences the phonological alternations—vowel loss, change in vowel quality, consonant assimilation and dissimilation, and so forth—which are introduced by the set of ordered phonological rules. If such a root is reduplicated for the repetitive aspect, the stress is retained in the reduplicated syllable until quite late in the phonological rules, thus preventing the deletion of the vowel in the reduplicated syllable. For example: čə-qúqúlʷə [čəqúqúlʷə] *to be joking, teasing*.

1.2. An exception to the general statement above for stressed roots, that is, that stress remains on the syllable of the root in which it is found in the underlying form regardless of the affixes, occurs when certain verb roots are restructured by some member

of a rather uncommon set of derivational devices. These devices are part of a residual aspectual system of duration and iteration, which is separate from the normal and more productive Cupeño system of Perfective, Imperfective, and Repetitive aspects. The Durative-Iterative aspect system is marked by restructuring the root in a number of ways. As the Durative-Iterative devices rarely occur in the Cupeño data, it has not been possible to develop a precise specification of the forms, but they often involve stress change from the underlying position to some other syllable of the root. The change in position of the stress is sometimes accompanied by a suffix -(áh)a-na, by vowel metathesis or other changes in vowel quality, or by an infixal glottal stop. A type of reduplication occurs in this aspect system which, unlike the repetitive reduplication mentioned in **1.1**, does not retain the stress in the reduplicated syllable. This allows for the loss of the vowel in that syllable. Some examples of forms marked for this system (indicated as D-I, since in some forms it is uncertain whether Durative or Iterative aspect is being indicated), with the basic forms of the verbs, are given below:

[čáspələ-] (probably < čá-čapala) ~ [čəpələ-], D-I of čá-pala *to mend*

[číʔinə-] *to carry in arms*, D-I of číʔinə *to lift* [huváʔə-] *to smell* (~ [húvihuvi-] *to sniff (repetitive)*), D-I of húvaʔa (?) *to smell*

[kušáanə-] *to take, pick up* ~ [kuší-] ~ [kúšənə-], D-I of ku-ša *to take*

[muháanə-] ~ [múmhənə-] (< mú-muhV-a-na) *to shoot arrows*, D-I of mu-hV *to shoot with a bow*

[suʔlínə-] *to start a basket*, D-I of súlə *to tie*

[wəláwəli-] *to irrigate*, D-I of wálə *to dig*

[ʔáʔčiwi-] (< ʔá-ʔačiwi) ~ [ʔičáay(wi)-], D-I of ʔáči(wi) *to make, do*

[ʔuláanə-] (< ʔulV-áha-na) ~ [ʔúʔlənə-] (< ʔú-ʔulV-a-na), D-I of ʔúlv *to sew*

These examples show many of the effects of the Durative-Iterative aspect system. It is easy to see how confusion could be intro-

⁴ Phonetic forms are transcribed in a systematic phonetic notation and are indicated by [. . .], except in **3**; morphophonemic forms are indicated by no special punctuation. Most phonetic symbols should be self-explanatory, except that Serrano vowels with subscript dot are retroflexed, ʷ is the palatal lateral.

duced in comparative work if the cognate forms of the verb roots or their derived nouns are in different aspects in different languages, for the variations, while not sufficiently profound to obscure cognacy altogether, certainly obscure original vowel quality and stress placement. Work in comparative Cupan thus far has indicated that sometimes a language will retain only one member of the original doublet or triplet set for a given verb, basing the forms for the productive aspectual system on only this one form, the other forms being lost. This makes it impossible to determine the basic form of the root from which the entire set is derived, this root being the one which ideally is needed for comparative work.

1.3.0. While most Cupeño roots contain stressed vowels, a small group of roots, including, however, some of the most common roots in the language, are stressless. These roots contain only unstressed vowels. When such a root occurs with an affix, stress may be introduced as an element of the affix, as noted in **1.0b**, or if stress is not an element of the affix, it is introduced according to the rule stated in **1.0c**.

1.3.1. As the Cupeño stressless roots occur so frequently, field workers often run into them while collecting short lists of basic vocabulary or brief text materials, and their forms are difficult to account for without full paradigms. Seiler, lacking the full paradigm for the stressless root *tə-wa* *to see*, was forced to attribute the location of the stress in the past perfect forms [minótəw] *I saw them*, [mipótəw] *he saw them*, [mičómtəw] *we saw them* to the presence of an enclitic [-ʔəp] *past* which occurred in the sentences in which he collected the forms.⁵ As a matter of fact, the presence of [-ʔəp] in these sentences was coincidental, as forms like [minótəw], etc., often occur in sentences which do not contain [-ʔəp], and, conversely, [-ʔəp] occurs in sentences where the verb prefix is not stressed. It happens that the prefixation of

person markers is simply a mark of the past tense in Cupeño, and does not depend on the position of stress in the past tense form of the verb. The person prefix is stressed in these forms because a stress carried by the prefix, which stress is usually blocked by root stress or by stress on some suffix, is retained here because the root is stressless and there is no suffix which would shift the stress. Thus these forms noted by Seiler are a manifestation of the type of situation noted in **1.0b**, where the forms of affixes determine stress placement, and one need not say, as Seiler does, that "Cupeño forms like minótəw, mipótəw are of a special type that show stronger univerbalization or fusion into a verb complex than the other types of verb forms."⁶

1.3.2. So that future workers in these languages, particularly in Cupeño, may be able to avoid such problems, we present here a full list of the stressless roots so far identified: hi·lʷa *cheek*, hi·ña *saliva*, ki· *house*, ku· *fire*, ku·ša *get, take*, kʷa· *mother's father*, kʷa·ʔa *eat*, kʷa·la *armpit, side*, kʷa·ši *tail*, ma· *hand, arm*, ma·xa *give*, mə·qə *kill*, mə·ši *father's brother*, mə·xi *navel*, mu· *nose*, mu·(čə) *nipple*, mu·hV *shoot with bow*, mu·šə *beard*, whiskers, mu·vi *snot*, na· *father*, na·ŋə ~ na·ŋi *tongue*, nə·qə *come*, nə·ši *mother's (younger?) sister*, ñə·ŋa *saliva*, ŋa·ŋa *weep*, pa·ha *father's sister*, pə·la *leaf*, pi· *breast*, pu·čV *eyes, face, seed*, qa· *paternal grand-relative*, qə·na *gall*, qə·wi *forehead*, qi·lʷa *nape of neck*, šu· *mother's mother*, šu·la *finger nail, claw*, ta·ma *mouth, teeth*, tə·və *put down*, tə· *sinew*, tə·wa *see*, tə·wi *chest*, tu·ku *carry*, wa·qa *shoe*, wə·na *put in*, wi·ki *flight feather*, wing, ya·xa *say*, yə· *mother*, yu· *head, head hair*.

It will be noted that all the stressless roots cited above have a long vowel in the first syllable. This is simply because of the phonological redundancy rule in Cupeño whereby all root-initial syllables are either stressed or long. Thus the vowel of this syllable is never

⁵ Seiler, op. cit. p. 144.

⁶ Ibid.

deleted when these forms are prefixed (except, of course, as specified in 1.2). For examples illustrating the different treatment of unstressed initial syllables in Luiseño, see 2.7.

1.3.3.0. Stress placement in words involving stressless roots may be determined by the forms of certain affixes. A distinction is made between 'root stress,' indicated by the acute accent, and 'affix stress,' indicated by the grave accent. Root stress overrides affix stress, and only the first of a series of root stresses within a word is retained phonetically. Conversely, in the absence of root stress, only the last in a series of affix stresses is retained.

1.3.3.1. Person prefixes (subject markers, possessor markers) have affix stress, one example being the past tense marker noted in 1.3.1, which introduces the subject prefix. Other examples are: *nə-na'* [nónə] *my father*, *čəmə-ya-xa-pi'* [čəmyəxpi] *us to say*.

1.3.3.2. A few suffixes are themselves stressed when they occur with stressless roots. These are -qà *present imperfect (singular subject)*, and -i *durative subordinator*. Examples are: *ta-və-qà* [təvqá] *... is putting down*, *ya-xa-qàlə-i* [yəxqəlí] *while ... was saying*.

1.3.3.3. Some suffixes place the stress on the last vowel of the root. The suffixes are: *ʔa-wV* *at*, *ʔči'* *with, by means of*, *ʔma'* *diminutive*, *ʔnu-kV* *punctual subordinator*, *ʔŋə'* *in*, *ʔŋəʔa-wV* (*< ʔŋəʔa-wVʔ*), *ʔŋə-xV* *from*, *ʔpə'* *place of*, *ʔwi* *augmentative*, *ʔyə* *objective case*, *ʔyəkə'* *to*. *ʔma'* and *ʔwi* behave slightly differently from the others; their behavior is discussed in 2.6. Examples are: *nə-mà-či'* [nəməčí] *with my hand*, *nə-qà-ma'* [nəqámə] *my son's child* (*qa'* *paternal grandrelative*), *pəmə-yù-ŋə'* [pəmyúŋə] *on their heads*, *ʔə-pa-hà-yə* [ʔəpəháy] *your father's sister* (*objective case*).

The stress placed on the root by the suffixes cited above is placed there only when the root immediately precedes the suffix in question or if there is only one intervening suffix between the root and the stress-bearing

ing suffix. Compare the following examples: *ʔisi-lʔə-ya* → *ʔisi-lʔə-ya* [ʔisilʔi] *coyote* (*objective case*), *ʔisi-lʔə-mə-ya* → *ʔisi-lʔə-mə-ya* [ʔislʔəmi] *coyotes* (*objective case*).

1.3.3.4. The suffixes -wə *present imperfect (plural subject)* and -wə-nə *past imperfect (plural subject)* place the stress on the first vowel of the root. Examples are: *yà-xa-wə'* [yáxwə] *... are saying*, *čəmə-mà-xa-wə-nə* [čəʔmáxwən] *we were giving*.

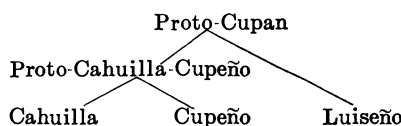
1.3.3.5. There seems to be one instance of 'root' stress in an affix. That is the suffix -í *nominalizer*, which is always stressed with a stressless root even when it occurs before a stressed suffix. Examples are: *ya-xa-i-qà-tə* [yəxíqət] *one who is going to say*, *kʷaʔa-i-čə* [kʷəʔís] *food* (cf. *kʷaʔa* *to eat*).

1.3.3.6. Note that none of these stresses which are part of the forms of affixes are retained when the affixes occur with stressed roots. Thus we have: *mi-nə-kʷáwə-i-nə* [minəkʷáwin] *I invited them*, *ʔisi-lʔə-ya* [ʔisilʔi] *coyote* (*objective case*), *mámà-yəkə'* [máməykə] *to the ocean*, *kʷáwə-i-mə-qà* [kʷáwinqə] *is inviting*, *wíwə-i-čə* [wíwiš] *acorn mush*.

1.3.4. If none of the affixes occurring with a stressless root contains an affix stress, or if there is no affix in the word, then stress is placed on the first vowel of the word. Examples are: *ku-ša* [kúš] *... will take*, *ma-xa-mə* [máxəm] *you (plural) give!*

2.0. Having presented the rules for stress placement in Cupeño, we turn now to the problem of the historical development of the different patterns of stress placement in the Cupan languages.

2.1. Bright and Hill⁷ have demonstrated that the genetic situation in Cupan is most probably that represented by the following diagram:



⁷ Op. cit.

This model for the history of the Cupan languages is supported by comparative phonological and lexical evidence, as well as by ethnohistorical evidence.

2.2. A general and fundamental precept of the comparative method governs the discussion of the question of retentions and innovations in a historical development such as that proposed by Bright and Hill for Cupan. In such a situation where three daughter languages, A, B, and C, have developed from a proto-language P, and A and B share a period of common development not shared by C, then if some feature X is found in both A and C, we may assume that it was a feature of P. The lack of this feature, or its replacement by some new feature X', in B must be considered an innovation which did not exist in P, unless there is compelling evidence to the contrary. The handling of this type of case is the same in any discipline based on the genetic method, in comparative anatomy as well as in comparative linguistics. Without this precept such disciplines cannot operate. Furthermore, in the case of the Cupan languages, the feature X under consideration is more complex and irregular—unpredictable stress in Cupeño and Luiseno—while X' is a simpler, more regular feature—root-initial stress in stressed roots in Cahuilla. The suggestion that the more complex feature would develop independently in the two branches of Cupan would need extremely strong confirmatory evidence. We hope to show 1) that the evidence to support Seiler's suggestion that the Cahuilla feature is the more conservative one is not strong enough to counter both the basic precept of the comparative method noted above and the evidence from internal reconstruction in Cupeño and Luiseno, and 2) that the situation in Cahuilla may plausibly be explained as an innovation on the basis of the evidence from Cupeño and Luiseno presented here.

2.3. Seiler notes that there are many cognate sets in Cupan like the following: Ca [qáxal], Wánikik Ca [qáxa·l], Cu [kəxál],

Lu [qaxá·l] *quail*.⁸ His explanation for such sets is as follows: glottalization, seen in the objective case in Cahuilla, e.g., qáxa·?-l-i *quail (objective case)*, becomes vowel length in Wánikik Cahuilla (qáxa·-l-i), Cupeño, and Luiseno, and that somehow "the length penetrated from the objective into the subjective case . . . primary and secondary stress were permuted."⁹ This is supposed to have happened in both Cupeño and Luiseno, on separate lines of descent, to yield Cu [kəxál], Lu [qaxá·l]. This seems unnecessarily complicated, and in certain respects, rather implausible.

While it is true that in Cupeño there are no unstressed long vowels, they do exist morphophonemically, and these long vowels have no relation with the rules for stress placement. In Luiseno the long:short opposition obtains both in stressed position and in some unstressed positions.¹⁰ We suggest that it is more likely that in Cahuilla an innovation—the regularizing of stress as root-initial throughout the lexicon—affected forms like Proto-Cupan *qaxá·-la, yielding Wánikik Cahuilla [qáxa·l]. Another phonetic change, not undergone by Wánikik Cahuilla, seems to have taken place in both Cahuilla and Cupeño, where vowel length oppositions in both stressed and unstressed positions are lost.¹¹

2.4. The Cupeño objective case suffix, -yə, where ` is added to the last vowel of the root (**1.3.3.3**), is cognate with the Cahuilla suffix -?-i, the ` in Cupeño corresponding to the infixed glottal stop in Cahuilla. However,

⁸ A list of the cognate sets where there is a difference in stress placement among the three languages is given in **3**, below.

⁹ Loc. cit. p. 145.

¹⁰ Cf. William Bright, Luiseno phonemics, *IJAL* 31.342-345.

¹¹ Note that the loss of length oppositions does not affect double vowels, which result from the morphophonemic reduction of underlying VhV. Note also that Cahuilla forms with non-initial double vowels (all are probably recent loanwords) are unaffected by the stress shift, e.g., [paxáa?] *racer snake* (from Lu [paxá·?]), [qaxóon] *box* (from Spanish cajón).

we cannot say that this stress has 'penetrated' into any other case in Cupeño. First, in the stressless roots the subject case forms have stress on the prefix (1.3.3.1), e.g., *nə-ma* [nəmə] *my hand* (vs. *nə-mà-yə* [nəməy] *my hand (objective case)*), or on the first vowel of the root (1.3.4), e.g., *ma-lə* [mál] *hand*. Second, when the objective case suffix occurs with stressed roots, the root stress blocks or overrides the affix stress. In fact it is possible to say almost precisely at what point in the ordered set of phonological rules this blocking rule occurs.

The deletion of affix stress in the environment of root stress occurs AFTER the rules for vowel deletion. The first three rules for vowel deletion in Cupeño are:

2.4a. A word-final short unstressed vowel is deleted.

2.4b. A short unstressed vowel followed by word-final or preconsonantal *y* (or *w*?) is deleted and the semivowel is vocalized to *i* (or *u*?).

2.4c. A short unstressed vowel is deleted in the environment V_1C_CV , where V_1 is stressed or long.

Thus: *ʔísi-lʲə-mə-yə* *coyotes (objective case)* → *ʔísi-lʲə-mə-y* (by 2.4a) → *ʔísi-lʲə-m-i* (by 2.4b) → *ʔísi-lʲə-m-i* (by 2.4c) ([ʔíslʲəmil]). The singular form, *ʔísi-lʲə-yə* *coyote (objective case)*, however, involves a stress which blocks the deletion of the second vowel: *ʔísi-lʲə-yə* → *ʔísi-lʲə-y* (by 2.4a) → *ʔísi-lʲ-i* (by 2.4b), and 2.4c does not apply. Without the suffix stress imposed on the final vowel of the root, the rules would produce *[ʔíslʲi] instead of [ʔíslʲi].

Affix stress, as well as vowel length, is deleted BEFORE the late phonological rule whereby unstressed *a* becomes *ə* (except before word-final or preconsonantal *y*, *w*). An example is: *húnà-lə-yə* → *húnà-lə-y* → *húnà-l-i* → *húna-l-i* → *húna-l-i* [húnəli] *badger (objective case)*.

Thus the behavior of 'affix stress' can be described quite precisely. This morphophonemic affix stress does not, however, penetrate the subject case of inherently

stressed roots; indeed, as shown above, it does not even appear in the final phonetic form of these roots in the objective case, but is lost in the application of the phonological rules. We have [ʔíslʲi], not *[ʔíslʲi]; [húnəli], not *[húnəli]. The affix stress is retained in the final phonetic form ONLY when it occurs with stressless roots, as in 1.3.3. If Seiler's theory of 'penetration' were correct, a principled theory of internal reconstruction would predict stress on the final syllable of the root throughout the Cupeño lexicon, as stress-bearing suffixes may occur with every root. Actually, root-initial stress is the more common case in Cupeño. As shown above the presence of affix stress ALWAYS blocks vowel deletion in stressed roots, and is always retained in the final phonetic form of words containing stressless roots. Why should it only SOMETIMES, that is, ONLY in those roots where Cupeño disagrees with Cahuilla in stress placement, 'penetrate' into the other cases? It would seem much more reasonable to say that in these roots Cupeño retains the stress placement pattern of the proto-language, while the change was in Cahuilla: the simple innovation of root stress becoming root-initial stress throughout the lexicon, except in Wánikik Cahuilla and in some exceptions which we examine below.

2.5. In Wánikik Cahuilla, the regularizing innovation in Cahuilla mentioned above has apparently become further extended, so that root stress has become not simply root-initial, but word-initial. Thus in Wánikik Cahuilla stress occurs on the first syllable of prefixed forms such as [népɪsqə] *I went out* (cp. Desert and Mountain Cahuilla [nepɪsqə]).¹² The examples of word-initial stress given by Seiler for prefixed forms in the Desert and Mountain dialects of Cahuilla may be explained as a retention of the

¹² Seiler, op. cit. p. 141. The consequence of the regularizing of the stress pattern in Wánikik Cahuilla appears to be that considerations of stress have been simply dropped from the lexicon, stress serving now only to mark word boundaries.

stress pattern seen in Cupeño stressless roots. Seiler cites [néʔuʔ] *my navel*, [čémyaxwen] *we are like, we say*—as compared with forms like [netáxaw] *my body*, [nesálʔuh] *my fingernail*—and says that the stress on [néʔuʔ] and [čémyaxwen] represents an innovation: prefixal stress on monosyllabic roots.¹³ We suggest, to the contrary, that forms like [néʔuʔ] and [čémyaxwen] can be viewed as involving stressless roots, the only difference with the stress pattern in Cupeño being that the presence of the suffix -we-ne (cognate with the Cupeño -wə-nə) does not entail the special pattern described in 1.3.3.4.

There seems to have been a certain amount of reassignment of roots to the stressed or stressless set between Cahuilla and Cupeño. Examples are: Ca [nesálʔuh] (< ne-sálu-ʔV·), Cu [núʃulʔə] (< nə-ʃu-la-ʔV·) *my fingernail*; Ca [néʔaš], Cu [məʔáš] *my pet*. In such cases further comparative evidence is necessary before we can decide on the reconstruction of a stressed or stressless root for the proto-language.

2.6. The rules for stress placement in Cupeño may also be used to explain other examples noted by Seiler. He cites Ca [náxaniš], Cu [nəxániš] *man*; [támawet], Cu [təməwət] *mockingbird*.

Cupeño [nəxániš] is formed of the root na-xá *to be mature, of a male*, the durative marker -a-na (cf. 1.2), the nominalizer -í, and the absolutive suffix -čə. Thus the stress in the Cupeño [nəxániš] *man, a matured male* is explained by its being derived from the durative aspect of the verb. Another stress pattern appears in the plural [nánxə-čim] *men*, which is derived from the iterative aspect: ná-naxá-í-čə-mə. The stress placement need not be attributed to a proto-phenomenon of length relating to Seiler's proposed suffix -niš/-iš *status*.¹⁴ In Cupeño this is definitely the nominalizer -í and the absolutive -čə, with the stress of -í being overridden by the earlier root stress on ná-

and na(·)xá. There are many words in Cupeño suffixed with -í-čə which have root-initial stress, e.g., [wíwiš] *acorn mush* < wíwə-í-čə, [páčikiš] *leached acorn meal* < páči·kə-í-čə.

The morphology of [təməwət] *mockingbird* is tə·ma *mouth* with the augmentative ʔwi and the absolutive -tə, i.e., *big mouth*. Luiseño has [tamá·wut]. The augmentative suffix ʔwi, despite these examples, cannot, as Seiler suggests, involve imposing length on the last vowel of the preceding root. In fact, ʔwi, as well as ʔma· *diminutive* (see below), imposes stress on the last vowel of only stressless roots, and ʔwi *shortens* the final vowel of stressed roots. Note the stress pattern and vowel deletions in the following examples: húnə·ʔwi-tə → húnə-wi-tə [hún-wit] *bear*, ʔísi·wi-tə → ʔísi-wi-tə [ʔíswit] *wolf*. Thus we may assume that in another example given by Seiler, Ca [síkawet], Cu [səkáwit] *chipmunk* (Lu [ʃuká·wut] *tree squirrel*), the Cupeño and Luiseño forms retain the original stress placement, and the Luiseño form retains the original length (cf. Serrano [hika·wt] *chipmunk*).

Similarly for Ca [ʔíšvax], Cu [ʔíšvawit] *left hand*. In this case Luiseño has [ʔéšva]. Cupeño also has [ʔíšvəŋə] *on the left*, etc. Although the test forms with prefixes do not occur in our data, the comparative evidence suggests these forms involve a stressless root *ʔe·čava·. If so, this would explain why the stress is placed differently in the Cupeño and Luiseño forms.

Seiler explains the set Ca [kávaʔmal], Cu [kəváʔməl], Lu [kaváʔmal] *pot, olla* by suggesting that ʔma· *diminutive* has the form --ma and causes a stress shift. Again the Cupeño evidence argues against this analysis. Cupeño shows many forms with root-initial stress with ʔma·, e.g., [tíviʔməl] < tívi·ʔə·ma·-lə *small round basket*. ʔma· behaves like ʔwi *augmentative* in that it imposes stress only on stressless roots (note the vowel deletion in [tíviʔməl], not *[tíviʔəməl], which it would be if it were from *tívi·ʔə·ma·-lə), but unlike ʔwi it does not cause shortening

¹³ Ibid. p. 141.

¹⁴ Ibid. p. 145.

of the last vowel of the root, e.g., [nəkáñimə] < nə-káñi-ṽma- *my younger brother*. With shortening of the last vowel of the root, the form would be *[nəkáñimə].

2.7. Seiler notes that 'in many instances . . . but certainly not in very instance'¹⁵ of a difference in stress position in the Cupan languages, Luiseño is like Cupeño, and Cahuilla shows root-initial stress. It is in fact the case that in the cognate sets assembled for the three Cupan languages, where the three languages exhibit different stress patterns, Luiseño and Cupeño agree in the overwhelming majority of cases. Most instances of a difference in the stress placement between Cupeño and Luiseño forms can be attributed to differences in the handling of stressless roots in the two languages.

The pattern of placement of stress in Luiseño on words involving stressless roots is different in one important respect from that in Cupeño. While in Cupeño words with stressless roots and no affix stress have stress placed on the first vowel (1.3.4), the pattern in Luiseño seems to be that such words have the stress placed on the second vowel, so long as the first vowel is short, e.g., [ʃulát] *claw, hoof, nail* (cp. [púʃla] *its claw, hoof, nail*), [qawíʃ] *forehead* (cp. [nóqwi] *my forehead*), [kamfíʃ] *permission* (cp. [nókmiʔi] *my permission*), [qisí-viʃ] *tail* (cp. [píqsiv] *its tail*)¹⁶; and on the first vowel if that vowel is morphophonemically long, an example being [ʔéʃva] < ʔe-čVva- *left hand*, cited above.

The rules for placing stress on stressless words in Luiseño and Cupeño can be seen as two different manifestations of essentially the same rule. Recalling the Cupeño phonological redundancy rule whereby stressless vowels of stem-initial syllables are made long (1.3.2), that is, given a value of two morae instead of one, it can be seen that the rule for placing stress in the two languages

is simply that the vowel containing the second mora in stressless words is stressed.

2.8. A development in Luiseño previously unidentified is *a, *ə > i in —Cé, as in [mixé-l] *dove* < *maxé-l, [timét] *sun* < *tamet, [wixéʔtut] *pine* < *wəxé-.

2.9. A Cupeño development previously unidentified is that of *qa > kə in —Cṽ, where *a is short. Examples are: [kəxál] *quail* < *qaxá-l, [kəwíʃ] *rock* < *qawí-ča. Note that original *qa > Cupeño qə in the same position, as in [qəʃlʷ] *sagebrush* < *qa-ʃe-l.

3. In order to give a fuller picture, we list below those cognate sets where the stress placement is not the same in all three Cupan languages and where the corresponding forms are morphologically similar enough to allow a clear reconstruction.¹⁷ Cognate forms from Serrano, which is related to the Cupan group as a whole, are also included. The Serrano forms demonstrate that vowel length, phonetically preserved in most stressed positions in Luiseño, is original, and cannot be viewed as representing a secondary development within Cupan.

AGAVE: Ca ʔámul, Cu ʔəmúl, Lu ʔamúl: *ʔamúl

BUZZARD: Ca yúnaviš, Cu yunáviš, Lu yuná-viš: *yuná-viš

CHIPMUNK: Ca sɬkawet, Cu səkáwit, Lu ʃuká-wut *tree squirrel*: *sVká-wet; Se hika-wt

CONIFER SP.: Ca tévat, Cu tévət, Lu tuvát: *təvat; Se tivat

DOG: Ca ʔáwal, Cu ʔəwál, Lu ʔawá-l: *ʔawá-l

DOVE: Ca máxilʷ, Cu məxílʷ, Lu mixé-l: *maxé-l; Se maqahʷt

FISH: Ca kíyul, Cu qəyúl, Lu kiyúl: *kiyúl (why Cu qə-ʔ); Se kihuc

FLEA: Ca múkaš, Cu məkʷáš, Lu

¹⁵ Ibid.

¹⁶ Examples from A. L. Kroeber and George William Grace, *The Sparkman grammar of Luiseño*, UCPL 16, p. 34 (1960).

¹⁷ The sets for *grass* and *raw*, which differ in the Bright and Hill list, have been eliminated, as new information has shown that the stress placement in these is actually the same in the three languages.

- muk^{wá}ʔčiš: *mæk^{wá}- (why Ca -u-?) or *muk^{wá}- (why Cu -ə-?).
- FOX: Ca qáwiʔsiš, Cu kəwísiš, Lu qiwé-wiš: *qawé-; Se q^wə-čəç
- FROG: Ca wáxačil^y, Cu wáxəčil^y, Lu waxáwkila (cf. waxá-wut *frog sp.*): waxa-; Se waqat
- GIRL: Ca náwišmal^y (cf. náwital^y *teen-age girl*), Cu nəwísməl (cf. nəwíkət *wife*), Lu nawí-l *young woman*, nawítmal *girl*: *nawí-; Se na-št *girl*, nəhç *young woman*, nəht *woman*, nəhtaviç *old woman*
- HORNED TOAD: Ca čálakaʔ, Cu čəlákə, Lu čaláka: *čalákaʔ.
- JACKRABBIT: Ca súʔiš, Cu súʔiš, Lu šuʔiš: *suʔiš; Se h^wui-ʔt
- LEFT HAND: Ca ʔíšvax, Cu ʔíšvawit, Lu ʔešva(-) (= morphophonemic *ʔe-čava-); Se -ʔə-č(a-)
- METATE: Ca málal, Cu məlál, Lu malál:l: *malál:l
- MOCKINGBIRD: Ca támawet, Cu təmáwit, Lu tamá-wut: *tamá-wət
- MOUTH, TOOTH: Ca -támʔa, Cu -təmʔə, Lu -tamá: *-tama(-) (reassigned as a stressed root in Ca); Se -ta-m(a-) *tooth*
- NORTH: Ca témam-, Cu təmám-, Lu tumá-m-: *təmá-m-; Se timinimi- *south*
- OAK SP.: Ca wíʔat, wíʔasil^y *oak spp.*, Cu. wíʔət, wíʔáwlət *oak spp.*, Lu wíʔá-šal: *wíʔa-; Se wíʔaht
- OLD MAN: Ca náxaluʔvel (cf. náxaniš *man*), Cu nəxánčúvəl (cf. nəxániš *man*), Lu naxánmal (cf. naxá-ča- *become old*): *naxá-
- ONE: Ca súplʔiʔ (cf. súpul *other*), Cu súpləwit, súlit, Lu supúl: *su-, *supul(-)
- PINE: Ca wéxet, Cu wəxítʔit, Lu wixéʔtut: *wəxé-
- POISON OAK: Ca ʔíyal, Cu ʔəyál, Lu ʔiyá-la: *ʔiyá-la (why Cu -ə-?)
- POT: Ca kávaʔmal, Cu kəvəʔməl, Lu kavəʔmal: *kavəʔmal
- QUAIL: Ca qáxal (Wánikik Ca qáxa-l), Cu kəxál, Lu qaxál:l: *qaxá:l; Se qaqa-taʔ
- RACCOON: Ca ʔáyamal, Cu ʔəyáməl, Lu páʔyamal (with pá- *water?*): ʔayá-mal¹⁸
- RIVER: Ca wániš, Cu wániš (cf. wánəwət *Milky Way*), Lu waníš: *waniš (why Cu -ñ-?); Se wanit
- ROCK: Ca qáwiš, Cu kəwíš, Lu qawí-ča *mountain*: *qawí-ča; Se qai-č *mountain*
- SAGEBRUSH: Ca qásil^y, Cu qəšíl^y, Lu qá-šil (cf. qá-šimal *blue sage*): *qa-še-l (stress?); Se qa-q^wč
- SOUTH: Ca kíčam-, Cu kičám-, Lu kí-čam-: *ki-čam- (stress?)
- SUN, DAY: Ca támit, Cu támit, Lu timét: *tamet¹⁹
- SYCAMORE: Ca sívil^y, Cu səvíl^y, Lu šivé-la: savé-la (why Ca -i-?); Se havə-č
- THIS (OBJECTIVE CASE): Ca ʔívʔi, Cu ʔivíy, Lu ʔivíʔ: *ʔiví-; Se ʔiví(y)
- WOOD, TO GATHER: Ca kélaw- (kélawat *wood*), Cu kəlaw- (kəlawət *wood*), Lu kulá-w- (kulá-wut *wood*): *kəlá-w- *gather wood*, *kəlá-wVt *wood*; Se k^wuça-t *wood*
- YUCCA MOHAVENSIS: Ca húnuvat, Cu hənúvət, Lu hunú-vat: *hunú-vat (why Cu hə-?) or *hənú-vat (why Ca -ú-?)
- YUCCA WHIPPLEI: Ca pánal, Cu pənál, Lu panál:l: *panál:l

¹⁸ *ʔayá-mal is reconstructed rather than *ʔayám-al, because Cahuilla would have *ʔáym-al from *ʔayám-al.

¹⁹ Serrano ta-miat *sun, day* is probably not cognate. It is related to the Serrano verb ta-miʔ *to be light*. If Serrano had a cognate with *tamet, we should expect something like *təmət.